PROCEEDINGS OF THE

ROYAL ENTOMOLOGICAL SOCIETY

OF LONDON

SERIES C. JOURNAL OF MEETINGS

VOLUME 24. No. 5, 1959

ORDINARY MEETING

WEDNESDAY, 1st JULY, 1959, at 5.30 p.m. (Tea 5 p.m.)

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 3rd June, 1959.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library [see p. 20].
6. Admission of Fellows.
7. Exhibits.
8. Communications.

Dr. R. O. Brinkhurst

Alary polymorphism in the Gerroidea (Heteroptera)

[ABSTRACT]

Many semi-aquatic water bugs show pronounced alary polymorphism, and this has frequently been investigated in the laboratory, usually by breeding experiments. These have shown that the polymorphism is affected by the environment.

Field work on *Gerris* and *Velia* has indicated a correlation between habitats, life-cycles and polymorphism which has in turn led to a new interpretation of existing experimental data, and also to fresh experiments to determine the nature of the environmental effect. An account of the occurrence, significance and mechanisms of determination of this polymorphism will be given and will show that both genetic segregation and an environmentally controlled switch-mechanism play a part.

NOTICES

The next meeting will be held on *Wednesday, 7th October*, 1959 :

Dr. A. J. Haddow.—The behaviour of bloodsucking Diptera in and above the tropical rain forest.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 3RD JUNE, 1959

Dr. B. P. UVAROV, C.M.G., F.R.S., President, in the Chair

Present, 53 Fellows and 12 Visitors

Before the meeting formally opened the President extended a welcome to Mr. Curtis W. Sabrosky and Dr. J. F. Holloway of the United States Department of Agriculture.

The minutes of the Ordinary Meeting held on 6th May were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : Mr. Lalit Narayan Lal, M.Sc. ; Dr. Niyazi Lodos ; Mr. A. S. McClymont ; Dr. Sebastião J. de Oliveira ; Mr. Ghulam Sarwar Salim ; and Mrs. Navamany Selvarajah.

For the second time (taken as read) : Mr. Kelvin Duncan Ashforth ; Dr. William Geoffrey Harrower Coaton, M.Sc., Ph.D. ; Mr. Friedrich Wolfgang Gess, B.Sc. ; Mr. Christopher Joseph Horton ; and Mr. Peter Sydney Tyler.

The Secretary read the names of the following newly elected Fellows of the Society : Mr. Muhammad Zahurul Alam, Agricultural Experiment Station, P.O. Tejgaon, Dacca, East Pakistan ; Mr. Prakash Nath John, M.Sc., Holkar College, Indore, M.P., India ; Mr. Laurence Alfred Mound, 27 Ballogie Avenue, London, N.W.10 ; Dr. Ayyadevara Mohan Rao, Ph.D., B.Sc., M.S., World Health Organisation, Geneva, Switzerland ; and Mr. Ian James Wyatt, Glasshouse Crops Research Institute, Rustington, Sussex.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. L. N. Baxter, Mr. H. T. Pagden and Mr. K. K. Reid signed the Obligation Book and were admitted Fellows of the Society.

Dr. R. C. B. Hartland-Rowe made a short communication on sounds emitted by various moths at Kampala, Uganda. He found that the males of several species emitted sounds in response to tactile stimulation.

Acherontia atropos L. and *Coelonia fulvinotata* Butl. stridulate by slow lateral movements of the two claspers. *Deilephila nerii* L., *Hippotion osiris* Dolm. and *Hippotion celerio* L. produce sounds by retracting the claspers violently, apparently forcing air out of the space behind and between them. In *H. celerio* the sound is a high-pitched purr and in *D. nerii* it is a reedy buzz. Males of various other Sphingids belonging to the genera *Herse*, *Basiothea*, *Pseudoclanis*, *Temnora* and *Nephele* could not be persuaded to emit sounds at all. Stridulation was also observed in a male of *Rhodogastria bubo* Walk., an Arctiid, the sound being produced by a rapid forward and backward movement of the hind coxae. This sound is quite distinct from the sizzling noise produced when froth is emitted from the thorax, a phenomenon believed to be well known.

Mr. H. T. Pagden showed a series of photographs of Malayan hornets :

(1) Three photographs showing a queen hornet, *Vespa affinis indosinensis* Pérez, at the nest which she herself had built ; there were, at the time, no workers. The nest had been badly damaged a few days after the photographs had been taken and it was therefore impossible to determine just what stages had been represented. The queen had vanished. The tubular entrance to the nest, sometimes considerably longer than in the example shown, may be of value in the defence of the nest before the first workers emerge. In one photograph, showing the queen alighting at the entrance of the nest, it was of interest that the exposure of 1/3000 second had not been short enough to stop the wing motion.

(2) Two photographs showing the beginning of a nest built by a queen and four workers of the same species whose original nest had been destroyed. One picture

showed three cells (one containing an egg), the queen and three of her daughters, and the beginning of the canopy. In the other the nest was shown 26 days later, with one worker at the entrance and the queen inside. In this case there had at no time been a tubular entrance to the nest, perhaps because there had been four workers in addition to the queen right from its start and therefore always a guard available.

(3) A photograph showing a queen of the hornet *Vespa tropica leefmansi* Vecht raiding a nest of an unidentified species of *Ropalidia*. She was removing adult larvae, and perhaps pupae (some of the capped cells had been roughly torn open), presumably to feed her own brood ; this appeared to be a common habit of *V. tropica*. The *Ropalidia* nest was on the underside of a frond of the fern *Dipteris conjugata*, and was enclosed by a canopy of silk-like consistency, somewhat similar in colour to alkathene.

Dr. H. E. Hinton exhibited drawings and electron micrographs of the respiratory system of the eggs of various Diptera. The respiratory horns of *Drosophila* and some genera of the families Sepsidae, Sphaeroceridae, Muscidae and Cordiluridae do not function as has been previously supposed. The surface of most of the respiratory horn consists of an open hydrofuge meshwork that provides a large water-air interface. The air film held by the hydrophobe meshwork is constant in volume, and in some species it resists wetting by excess pressures of up to an atmosphere. The air film is thus a plastron. The plastron air is continuous with the air film held in the chorion. These fly eggs are generally firmly embedded in the larval food material with the horns projecting above the surface. When it rains sufficiently a thin or thick layer of well-aerated water flows over the eggs, and the plastron of the respiratory horns extracts oxygen from that dissolved in the ambient water.

Professor G. C. Varley said that Dr. Hinton's communication reminded him of some work done about twenty years ago by John Maple in California, who found similar structures in the eggs of Encyrtids parasitic on eggs of Scale Insects. Dr. Hinton said he knew of Maple's work, but he would like to add that Dr. Thorpe was not wholly in agreement with his findings.

Mr. M. F. Claridge gave a paper on some closely allied species of the genus *Eurytoma* (Hymenoptera : Eurytomidae), an abstract of which appeared on page 13.

In expressing his appreciation of Mr. Claridge's communication, Mr. G. J. Kerrich said he deserved to be congratulated on this work, which showed very clearly how desirable it was that orthodox taxonomy and field work should go hand in hand. Unfortunately, many entomologists were unable to combine these two.

Dr. D. J. Lewis gave a paper on some biting flies of British Honduras, an abstract of which appeared on page 13.

Professor P. C. C. Garnham (a visitor), who had accompanied Dr. Lewis on the expedition which formed the basis of this paper, said he would like to emphasise the fact that in British Honduras *Phlebotomus* is completely restricted to the forest, so that leishmaniasis is confined to workers in the forest itself. The insect's habit of remaining completely in the forest therefore determined the incidence of the disease. This was in striking contrast to Costa Rica and Brazil, where leishmaniasis occurred outside the forest.

The President commented that this was an interesting case of different behaviour in members of the same family of insects in two different countries. It was also an unusual case in which deforestation might be advantageous.

PAUL FREEMAN, *Honorary Secretary.*

Additions to the Library

Presented

Free, J. B. & Butler, C. G. *Bumblebees.* 8vo. London: Collins, 1959. [*New Naturalist* **40.**] [The Publishers.]

Gregson, J. D. *The Ixodoidea of Canada.* 8vo. Ottawa, 1956. [*Publ. Dept. Agric. Can.* **930.**] [J. A. Downes.]

Harrison, R. A. *Acalypterate Diptera of New Zealand.* 8vo. Wellington, 1959. [*Bull. N.Z. Dep. sci. industr. Res.* **128.**] [The Author.]

Linsley, E. G. & MacSwain, J. W. Ethology of some *Ranunculus* insects with emphasis on competition for pollen. *Univ. Calif. Publ. Ent.* **16**: 1–46, 1959. [The Publishers.]

Linssen, E. F. *Beetles of the British Isles.* 2 vols. 8vo. London: Warne, 1959. [*Wayside & Woodland.*] [The Publishers.]

Pesson, P. *The world of insects.* 4to. London: Harrap, 1959. [*Living Nature Series.*] [The Publishers.]

Ruinard, J. [*Investigation into bionomics, economic importance and possibilities of control of the sugarcane stalkborers in Java.*] 8vo. Hilversum, 1958. (*In Dutch with English summary.*) [The Director, Laboratorium voor Entomologie, Wageningen.]

Van Emden, F. I. Results of the Zoological expedition of Prof. Dr. Hakan Lindberg to the Cape Verde Islands ... 1953–54. No. 24. Muscidae. *Comment. biol. Helsingf.* **20** (1): 1–17, 1958. [Commonwealth Institute of Entomology.]

Zumpt, F. *Exploration du Parc National Albert. Mission G. F. de Witte* (1933–1935). Fasc. 92. *Calliphoridae* (*Diptera Cyclorrhapha*). Pt. II. *Rhiniini.* 8vo. Brussels, 1958. [The Author.]

Purchased

John, H. *Coleoptera Clavicornia. Fam. Discolomidae* (= *Notiophygidae*). 4to. Anvers, 1959. [*Genera Insectorum.* **213.**]

Kelton, L. *Male genitalia as taxonomic characters in the Miridae* (*Hemiptera*). 8vo. Ottawa, 1959. [*Canad. Ent. Suppl.* **11.**]

Senevet, G. & Andarelli, L. *Les moustiques de l'Afrique du nord et du Bassin Mediterranéen. Les genres* Culex, Uranotaenia, Theobaldia, Orthopodomyia *et* Mansonia. 8vo. Paris: Lechevalier, 1959. [*Encycl. Ent.* (A) **37.**]

Stichel, H. W. *Illustrierte Bestimmungstabellen der Wanzen.* II. *Europa.* (*Hemiptera-Heteroptera Europae.*) Vol. 3, Hft. 3; Vol. 4, Hft. 9 & 10. 8vo. Berlin-Hermsdorf, 1959.

In addition, separates have been presented by Dr. D. J. Lewis; Dr. V. G. L. Van Someren; Dr. T. E. Woodward; Mr. T. R. Odhiambo; *Shell Ltd.*; Dr. J. T. Salmon; Professor D. S. Bertram; Miss A. Løken; Mr. R. S. George; Commonwealth Institute of Entomology; Mr. C. E. Taylor; Mr. B. O. C. Gardiner; Dr. J. J. Steyn; Dr. P. Silva; State Plant Board of Florida; Mr. W. Z. Coker; West African Institute for Trypanosomiasis Research; Dr. W. K. Ford; Dr. A. G. Hamilton; Dr. A. M. Massee; Smithsonian Institution; Professor C. M. Biezanko; Anti-Locust Research Centre; Mr. A. Tjønneland; United States Department of Agriculture; Professor B. Hocking; British Museum (Natural History); Dr. J. E. Treherne; Mr. J. A. Downes; Professor J. Lane; Mr. E. S. Brown; Laboratorium voor Entomologie, Wageningen; Director, E.A.T.R.O., Tororo; American Entomological Society; Dr. W. Büttiker; Dr. J. L. Cloudsley-Thompson; Chicago Natural History Museum and Dr. A. M. Easton.

PRINTED BY ADLARD AND SON, LIMITED, BARTHOLOMEW PRESS, DORKING.